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The Turing Guide

By Jack Copeland, Jonathan Bowen, Mark Sprevak, Robin Wilson and others
Oxford University Press, Oxford, UK, 26 January 2017, xv+576 pp, 246 × 189 mm, ISBN: 9780198747826 (Hardback, $75.00), ISBN: 9780198747833 (Paperback, $19.99)

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This is an interesting book which I am glad to have read. Unsurprisingly, in a volume that contains 42 chapters by a large group of authors, some portions of the book will for any reader be more interesting and informative than others. I should also add that I think this book would be best served by dipping into chapters that appeal to the reader. As a reviewer, I have read the whole book in chapter order in a relatively short period of time.

Let me start with the pre conditions for readers who might find this book enjoyable and perhaps informative. Because the chapters in this collection are written independently, there is some overlap, even some contradiction or differences in assessment. Particularly if the reader is dipping into the chapters, this will be less aggravating than in a cover-to-cover read. More worrying is the difficulty of creating a full picture from just this collection. I had read Hodges excellent biography of Alan Turing [Hod83] and suggest that anyone who has not done so would be well advised to make this preparation because they will then benefit more from reading *The Turing Guide*.

There is excellent material on the various aspects of Alan Turing's wide range of contributions:

- His seminal work on the *Entscheidungsproblem* and what we now know as *Turing machines*
- Wartime work on cryptography and cryptanalysis
- Efforts on the design of physical computers
- Early thoughts on what we now call "Artificial Intelligence" (AI)
- Ahead-of-his-time ideas on biological growth
- Work in mathematics itself

A word of warning is in order about the material on Turing's mathematical contribution—this is probably the hardest section for a non-expert to understand.

For me, much the most interesting material comes from those who in one way or another were close to Turing. For example, Chapter 2 (*The man with terrible trousers*) by Alan Turing's nephew Sir John Dermot Turing speaks frankly about Alan's estrangement from the family and poignantly about the understandable desire to minimise the distress to Alan's mother of both his "criminal" prosecution and the potential scandal at the time of Alan's death. In all the debate about whether the death was or was not suicide (or something more sinister), I at least had never fully appreciated the family dimension of the last years of Alan's life. Sir John writes as a lawyer and points out that Alan's death came just before the Wolfenden Committee began the process of overturning the inhuman laws relating to homosexuality (that I still find hard to believe subjected any person to the treatment meted out in my lifetime to Alan and many others).

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On a more cheerful note, memories from Peter Hilton (*Meeting a genius*), Eleanor Ireland (*We were the world's first computer operators*) and Jerry Roberts (*The Testery: breaking Hitler's most secret code*) also brought this reader closer to Alan Turing as a living person in a way that complements Hodges' biography.

I also welcome Hilton's firm "Alan Turing was the acknowledged leading light of the [Enigma code] team. However, I must emphasise that we were a team—this was no one-man show". This is a (and by no means the only) correction to the journalistic tendency to describe Turing as "The man who invented x" (for too many instances of "x").

In addition to the personal contacts, some chapters I found particularly rewarding are:

- Doron Swade's (*Turing, Lovelace and Babbage*) is a very clear account –in wonderfully lucid prose– of a large historical perspective of computing machines.
- Brian Randell's chapters 8 and 17; for anyone who has not heard his account of uncovering the Colossus story, these chapters are strongly recommended.
- The material on *Biological Growth* (Margaret Boden's *Pioneer of artificial life* and the following chapter *Turing's theory of morphogenesis* by Wooley, Baker and Maini) are very clear expositions of material outside my normal reading and from which I learned a great deal.
- Ivor Grattan-Guinness'*Turing's mentor: Max Newman* is a (short) contribution that is excellent value.

No sane person would deny that Turning was a genius. However, the desire of readers to find heroes who change the world single handedly and the temptation of more journalistic writers to attribute progress to the contributions of single individuals serves neither historical accuracy nor, ultimately, the reputation of the individuals. There have been, for example, several post-Turing-centenary articles that have pushed back against the view of Turing as the father of the subject now known as Computer (or Computing) Science.

As I made clear at the outset, I recommend *the Turing Guide*: it has a lot of interesting material even if it is not uniformly well argued. Having made that positive evaluation, I allow myself a few minor reservations:

- There are some odd splits of material that don't serve to help the reader's understanding e.g. Randell's material (Chaps 8 and 17); Proudfoot's (Chaps 28 and 30); Simpson's (Chaps 13 and 38).
- As someone who worked in Manchester University for 15 years and who discussed the early history with Tom Kilburn in the run-up to the 1998 anniversary of the "Baby", I could wish that it were possible to form a panel of those involved to balance some of the statements made about Manchester machines.
- To my eyes, the typesetting of quotations (with, for example, no inset) makes them difficult to read.

In addition to the Manchester "disclaimer" I should state that: I am a colleague and friend of Brian Randell and a contributor to yet another book related to Alan Turing [CvL13].

References

[CvL13] Cooper S, van Leeuwen J (2013) Alan turing: his work and impact. Elsevier Science, 1st edition, May 2013. ISBN 9780123869807

[Hod83] Hodges Andrew (1983) Alan turing: the enigma. Burnett Books Ltd, 1st edition, 1983. ISBN 0-09-911641-3